

IN THE SPECIFICATION

Please add the following new heading and paragraph after the title on page 1, lines 6-7.

CROSS-REFERENCE TO RELATED APPLICATION

The present application claims priority of application serial number 103 18 068.0 filed on April 17, 2003 in Germany.

Please replace the heading on page 1, line 9 as follows.

BACKGROUND OF THE INVENTION Description

1. Field of the Invention

Please add the following new heading, before the paragraph on page 1, lines 14-22 as follows.

2. Description of Related Art

Please replace the paragraph on page 1, lines 14-22 as follows.

Particularly in the transmission of security-relevant data over an unsecured medium such as, for example, a common network and/or bus system. S_r such data is usually added a high-grade redundancy so that almost all statistical and systematic errors of the overall transmission system do not have any negative impact on the integrity of the data. As a result, ~~whereby~~ compliance to high security-related requirements with respect to the communication between individual network or bus users is achieved.

Please add the following new heading, before the paragraph on page 3, lines 4-9.

BRIEF SUMMARY OF THE INVENTION

Please replace the paragraph on page 3, lines 11-14 as follows.

The solution of the task according to the invention is in a very surprising manner already given by a process ~~with the elements of claim 1~~, a device ~~with the elements of claim 10~~, and a transmission system ~~with the elements of claim 19~~. The process is for the packet-oriented transmission of security-relevant data under application of at least one transmission system with a parallel and/or serial network and/or bus system with at least one user connected to it. The process includes transmitting the security-relevant data and redundant information based on the security-relevant data. The security-relevant data and the redundant information are transmitted in different packets. The device is for a transmission system with at least one parallel and/or serial network and/or bus system. The device is for the packet-oriented transmission of security-relevant data. The device includes means for the packet-oriented embedding of the security-relevant data and the allocated redundant information into different packets. The means are arranged on the side of the sender. The transmission system includes at least one parallel and/or serial network and/or bus system and at least one device.

Please delete the paragraph on page 3, lines 16-17.

Please revise the paragraph on page 5, lines 25-30 as follows.

Depending on the application-specific used serial and/or parallel networks and/or bus systems, ~~the invention moreover provides for the fact that the security-relevant data includes, comprises - besides the user data as such,~~

~~i.e. in particular input/output data and/or other safe process data~~ further data, in particular check and/or control data. The security-relevant data includes this further data besides the user data as such, i.e. in particular input/output data and/or other safe process data.

Please add the following heading, before the paragraph on page 7, lines 5-6 as follows.

BRIEF DESCRIPTION OF THE DRAWINGS

Please revise the paragraph on page 7, lines 9-16 as follows.

~~The following shall be valid for the enclosed figures:~~

- Fig. 1 is a block diagram showing~~shows~~ the invention-based structure of data packets for the packet-oriented transmission of security-relevant data-;
- Fig. 2 is a block diagram showing~~shows~~ a further invention-based structure to illustrate the considerably enhanced identification of systematic errors-; and
- Fig. 3 is a block diagram showing~~shows~~ the structure of a security-oriented message according to the current state of the art.

Please add the following heading, before the paragraph on page 7, lines 18-24 as follows.

DETAILED DESCRIPTION OF THE INVENTION

Please revise the paragraph on page 7, lines 18-24 as follows.

Referring to Fig. 1, ~~for the provision of a packet-oriented transmission of security-relevant data with a guaranteed high rate of user data and, at the same time, at a high level of protection against statistic and systematic errors,~~ an example for a security-oriented message comprising two data packets 1 and 2 ~~one and two~~ to be transmitted according to the invention is shown. This example is for the provision of a packet-oriented transmission of security-relevant data with a guaranteed high rate of user data and, at the same time, at a high-level of protection against statistic and systematic errors.

Please revise the paragraph on page 7, lines 26-31 as follows.

According to the invention, a security-oriented message of a security-relevant data set - as shown in Fig. 1 - principally comprises at least two separate data packets 1 and 2. 0 ~~whereas one data packet 1 comprises security-relevant data, and another data packet 2 comprises allocated redundant information.~~

Please revise the paragraph on page 7, line 33 to page 8, line 4 as follows.

Based on this structure in accordance with the invention, it is ensured that for a transmission of security-relevant data ~~also via an unsecured medium, i.e. essentially via a bus and/or network system which does not comply with security-oriented standards and/or comprises unsecured system users that~~ essentially all statistical and systematic errors are identifiable.

Transmission of the security relevant data is also via an unsecured medium, i.e. essentially via a bus and/or network system, which does not comply with security-oriented standards and/or comprises unsecured system users.

Please revise the paragraph on page 9, lines 14-17 as follows.

Data packet 2 ~~completes~~completing the security-oriented message and comprises a redundant information 21 that is allocated to the information content of data packet 1, i.e. a data securing value 21 that is based on the user data 11 and the check data 12.

Please revise the paragraph on page 10, lines 4-9 as follows.

As data packets to be transmitted principally always comprise the same number of bits for protocol-specific reasons, the data packet 1 comprising the security-relevant data (which in the present example is the user data 11 and additionally the check data 12)~~7~~ and the data packet 2 (comprising the check sum 21)~~7~~ also have the same bit length n.

Please revise the paragraph on page 10, lines 11-19 as follows.

Consequently, the user data rate~~7~~ (i.e. the relation between the useful data length and the overall data length, of a security-oriented message structured according to the invention) is considerably higher if compared to a security-oriented message. As shown in the

security-oriented message in Fig. 3, in which ~~as shown in Fig. 3~~ each data packet 3 and 3' includes~~comprises~~ both the security-relevant data, (i.e. in particular the user data), and a data protection value based on the security-relevant data. T, ~~whereas~~ these two elements are differently encoded.

Please revise the paragraph on page 10, line 29 to page 11, line 2 as follows.

To guarantee a high level of error protection for the sending and/or forwarding of security-relevant data by insecure slave users and/or an insecure master in addition to~~In order to additionally guarantee~~ ~~besides~~ the enhanced user data rate~~—, in particular~~ with the transmission of a security-relevant data set comprising only a small volume of user data 11, ~~a high level of error protection for the sending and/or forwarding of security-relevant data by insecure slave users and/or an insecure master,~~ the data protection value 21 that consequently has an increased number of bits is particularly effective.